

Name: _____

Chapter 10 Practice Test

1. Analyzing the Graphs of Quadratic Functions: Fill in the table.

QF	Does the parabola open upward or downward?	Is the vertex a minimum or maximum?	Write the coordinates of vertex.	Is the parabola narrower, wider or the same width as parent QF?	axis of symmetry equation
$y = 4x^2$					
$y = -x^2 - 2$					
$y = 1/3x^2 + 5$					
$y = 2x^2 - 4x$					

2. Write the capital letters corresponding to each function in order from WIDEST to NARROWEST parabola.

A. $y = -x^2 + 8$ B. $y = 0.3x^2 + 9$ C. $y = 3x^2 - 11$ D. $y = 1/3x^2 + 8$ E. $y = 5x^2 - 1$

3. Algebraic Writing: Answer each question in complete sentences using algebraic terms. Be sure to echo the prompts.

a. A peer tells you that the quadratic equation, $-x^2 + 3 = 0$, will have no solution because the parabola opens downward and will never touch the x-axis. Write your response to your peer where you agree or disagree with him/her and explain why.

b. Explain a real world situation in which a person would benefit from being able to apply one or more of the concepts of quadratic equations/functions. Be as specific as possible.

4. Parent Quadratic Function: Fill in the blanks with respect to the parent quadratic function.

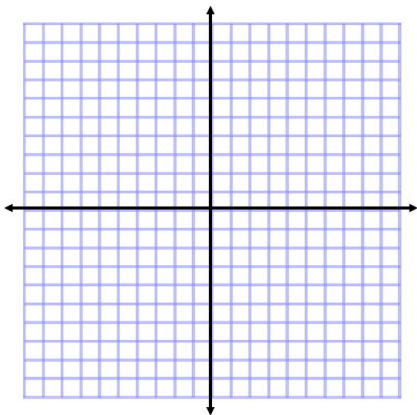
equation: _____

vertex: (____, ____)

equation of axis of symmetry: _____

shape: _____

5. Graph the quadratic function $y = x^2 + 5$ using the table of values.



x	y
-2	
-1	
0	
1	
2	

6. Graph each quadratic function on the coordinate plane. Provide all of the requested information. BE SURE TO DASH YOUR LINE OF SYMMETRY AND NAME YOUR function.

a. $y = x^2 - 6x - 1$

(Use $x = \frac{-b}{2a}$)

axis of symmetry: _____

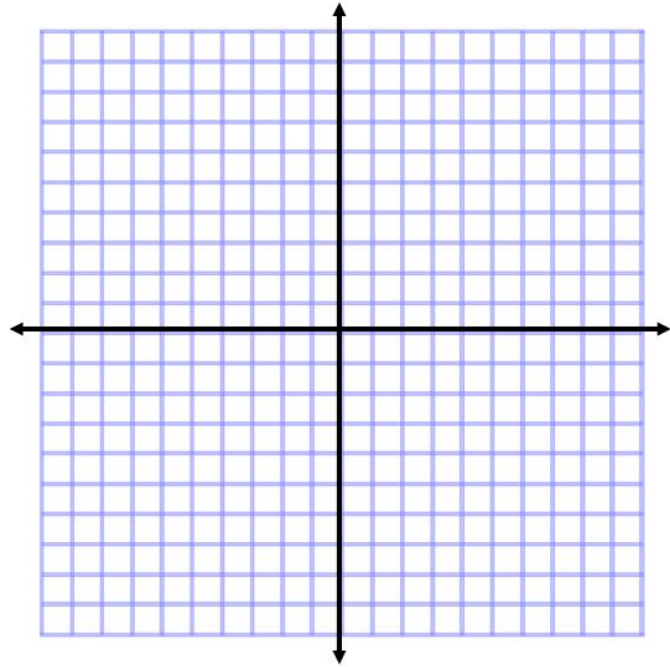
vertex: (____, ____)

point #1: (____, ____)

reflection of point #1: (____, ____)

point #2: (____, ____)

reflection of point #2: (____, ____)



b. $y = \frac{-1}{2}x^2 + 8x$

(Use $x = \frac{-b}{2a}$)

axis of symmetry: _____

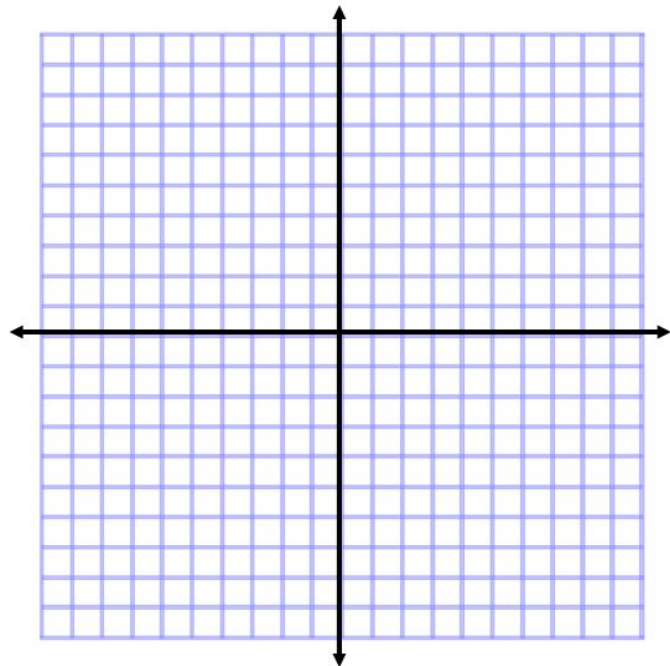
vertex: (____, ____)

point #1: (____, ____)

reflection of point #1: (____, ____)

point #2: (____, ____)

reflection of point #2: (____, ____)



7. Open-Ended: For each part, create your own example of the situation provided.

a. Write an equation for a quadratic function that opens UPWARD, is WIDER than the parent function, and has a vertex of (0,-4).

b. Write an equation for a quadratic function that has no roots.

8. Knowledge of Algebraic Terms

a. Please write the Zero Product Property.

b. Please write TWO synonyms for solutions of a quadratic equation.

c. Please write the quadratic formula.

x =

9. Solving Quadratic Equations: Please find all possible solutions to each quadratic equation. Recommended: check your solutions via substitution.
***You MUST use the requested method for full credit.**

a. Solve by SKETCHING the GRAPH of the related quadratic function:

$$0 = -x^2 - 3$$

b. Solve using the isolating the variable/square root method:

$$9x^2 = 81$$

c. Solve using FACTORING:

$$x^2 - 2x = 35$$

d. Solve using the quadratic formula. If necessary, round to the nearest hundredth.

$$5x^2 - 2x = 6$$

e. Solve using a method of your choice.

$$8x^2 + 9 = 38x$$

10. Real World Problem:

Marley shoots a rocket from an initial height of 2 feet with an initial velocity of 20 ft/sec. Using the parabolic motion formula, $h = -16t^2 + vt + c$, find:

i. the number of seconds the rocket will take to reach its maximum height (do NOT round your decimal)

ii. the maximum height of the rocket